TECHNICAL REVIEW DOCUMENT For OPERATING PERMIT 100PLR356

Larimer Energy, LLC – Larimer Energy Facility
Larimer County
Source ID 0690381

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I. Purpose

This document establishes the basis for decisions made regarding the Applicable Requirements, Emission Factors, Monitoring Plan and Compliance Status of Emission Units covered within the Operating Permit proposed for the Larimer Energy Facility located at the Larimer County Landfill. It is designed for reference during review of the proposed permit by the EPA, the Public and other interested parties.

Conclusions made in this report are based on information provided by the applicant in the Title V permit application submitted on October 19, 2010, and review of Division files. This narrative is intended only as an adjunct for the reviewer and has no legal standing.

Any revisions made to the underlying construction permits associated with this facility made in conjunction with the processing of this operating permit application have been reviewed in accordance with the requirements of Regulation No. 3, Part B, Construction Permits, and have been found to meet all applicable substantive and procedural requirements. This operating permit incorporates and shall be considered to be a combined construction/operating permit for any such revision, and the permittee shall be allowed to operate under the revised conditions upon issuance of this operating permit without applying for a revision to this permit or for an additional or revised construction permit.

II. Description of Source

The Larimer Energy Facility operates a flare that combusts gas collected from the contiguous Larimer County Landfill. The Larimer County Landfill is a municipal solid waste landfill and falls under the Standard Industrial Classification 4953. Because Larimer Energy is a support facility to the operation at Larimer County Landfill, and the two facilities are considered a single source for PSD and Title V purposes, the supporting facility assumes the SIC code of the primary activity. Decomposing waste encapsulated within the landfill produces a gas by-product that is primarily composed of methane and carbon dioxide. Landfill gas (LFG) is gathered using a gas collection and control system (GCCS). The GCCS is installed to control LFG migration. Collected LFG is sent to a flare at Larimer Energy for destruction. During its operation the flare generates various combustion by-products that are emitted into the atmosphere.

This facility is located at 5887 South Taft Hill Road in Larimer County. This area is classified as attainment/maintenance for carbon monoxide (CO). Under that

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classification, all SIP-approved requirements CO will continue to apply in order to prevent backsliding under the provisions of Section 110(I) of the Federal Clean Air Act. This Area is classified as non-attainment for ozone and is part of the 8-hr Ozone Control Area as defined in Regulation No. 7, Section II.A.1.

Wyoming is an affected state within 50 miles of the plant. The following Federal Class I designated area is within 100 kilometers of the plant: Rocky Mountain National Park.

Based on the information provided by the applicant, this source is categorized as a minor stationary source for both NANSR and PSD as of the issue date of this permit. For purposes of determining the applicability of the Prevention of Significant Deterioration regulations this facility is considered a single stationary source with Larimer County Landfill (02OPLR243). For NANSR, any future modification at this facility which is major by itself (i.e. a Potential to Emit of > 100 TPY of either VOC or NO_X) may result in the application of the NANSR review requirements. For PSD, any future modification at this facility which is major by itself (Potential to Emit of > 250 TPY) for any pollutant listed in Regulation No. 3, Part D, Section II.A.42 for which the area is in attainment or attainment/maintenance may result in the application of the PSD review requirements.

Potential emissions (in tons/yr) at the facility are as follows:

Pollutant	PM	PM ₁₀	SO ₂	NO _X	VOC	CO	HCI	Total HAPs
Larimer Energy Facility								
PTE (tons/yr)	2.41	2.41	2.22	9.83	0.30	53.5	1.11	1.27
Larimer County Landfill								
	226.2	72.9			17.82			
Total	228.61	75.31	2.22	9.83	18.12	53.5	1.11	1.27

Note that the facility is not major for Title V purposes based on its level of emissions. The Larimer County Landfill is subject to NSPS Subpart WWW which requires all municipal solid waste landfills with a design capacity greater than 2.5 million megagrams (Mg) and 2.5 million cubic meters to obtain an operating permit. Since, Larimer Energy Facility is considered a single source with Larimer County Landfill, Larimer Energy is also subject to the requirement to obtain an operating permit.

The facility was originally permitted under construction permit 09LR1197, to operate a generator in addition to the flare. The permit to construct this unit expired on September 18, 2011 and a cancellation request was submitted October 19, 2011.

Greenhouse Gases

The potential to emit greenhouse gases at this facility is less than 100,000 TPY CO_2e . Future modifications at this facility that exceed 100,000 TPY CO_2e may be subject to regulation. On July 20, 2011, a final rule regarding biogenic CO_2 emission was published in the Federal Register. This final action defers, for a period of three years,

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the application of the Prevention of Significant Deterioration (PSD) and Title V permitting requirements to carbon dioxide (CO_2) emissions from bioenergy and other biogenic stationary sources (biogenic CO_2). As it relates to this facility, biogenic CO_2 includes all CO_2 emissions from the combustion of biogas collected from the biological decomposition of waste in landfills.

NSPS Subpart WWW

The Larimer County Landfill is subject to the provisions of 40 CFR Part 60 Subpart WWW – Standards of Performance for Municipal Solid Waste Landfills. The design capacity of the landfill is 11,190,000 cubic meters. Based on the site-specific NMOC concentration from the Tier 2 testing, the NMOC emissions from the facility do not trigger the requirements to install a gas collection and control system (GCCS). The gas control system in place at this facility, Larimer Energy, is operating voluntarily and is not subject to the operating and monitoring requirements in NSPS Subpart WWW. If the Larimer County Landfill facility were to trigger the GCCS requirements, this facility would be subject to the control requirements in Subpart WWW.

III. Emission Sources

The Flare Guy Model FS82518 Utility Flare, Rated at 33 MMBtu/hr

Applicable Requirements: Initial approval of construction permit 09LR0110 was issued for the facility on September 29, 2009. According to the Division's database, self-certification for this facility was received on May 3, 2010. Therefore, under the provisions of Colorado Regulation No. 3, Part C, Section V.A.3, the Division will not issue a final approval construction permit and is allowing the initial approval construction permit to continue in full force and effect. The appropriate applicable requirements from the construction permit have been incorporated into the permit as follows.

- Visible emissions shall not exceed twenty percent (20%) opacity during normal operation of the source. During periods of startup, process modification, or adjustment of control equipment visible emissions shall not exceed 30% opacity for more than six minutes in any sixty consecutive minutes. Opacity shall be measured by EPA Method 9. (Reference: Regulation No. 1, Section II.A.1. and 4.) (Condition 1)
 - Colorado Regulation No. 1, Section II.A.5 provides an exemption to the Reg 1, Section II.A.1 20% opacity limitations. This exclusion specifies that visible emissions must not exceed 30% opacity for flares that combust waste gases. The requirements from Section II.A.5 were included in the operating permit.
- The permit number shall be marked on the subject equipment for ease of identification. (Condition 2)
 - This construction permit-only requirement was not included in the operating permit.
- This permit shall expire if the owner or operator of the source for which this
 permit was issued: (i) does not commence construction/modification or operation
 of this source within 18 months after either the date of issuance of this initial

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approval permit or the date on which such construction or activity was scheduled to commence as set forth in the permit application associated with this permit; (ii) discontinues construction for a period of eighteen months or more; or (iii) does not complete construction within a reasonable time of the estimated completion date (Condition 3)

This source was constructed within the timeframe specified in this condition and therefore this requirement was not included in the operating permit.

• Timberline (Larimer) Energy, LLC is voluntarily installing a landfill gas control system (the flare), in conjunction with the voluntary installation of a landfill gas collection system by the Larimer County Landfill. This is a voluntary action based on the results of Tier 2 gas sampling and analysis, carried out by the Larimer County landfill, which indicated that the generation of non-methane organic compounds has not exceeded the 50 Megagrams per year threshold that would require installation and operation of a landfill gas collection and control system (GCCS) at the site. Although this is a voluntary action and not required by any Federal or State regulation at this time, the system will be designed to meet the specifications for active collection systems as stipulated in 40 CFR, Part 60, Subpart WWW, §60.759 (Standards of Performance for Municipal Solid Waste Landfills). The GCCS is not required to comply with the design, reporting and operation requirements listed in Subpart WWW until such time that the facility actually becomes subject to these requirements. (Condition 4)

No actual requirements are listed in this condition and therefore this was not included in the operating permit.

• The control system will consist of an open, candlestick, landfill gas flare. The flare shall be in operation at all times whenever the landfill gas collection system is in operation. (Condition 5)

The requirement was included in the operating permit.

- Emissions of air pollutants shall not exceed the following limitations (as calculated in the Division's preliminary analysis): (Condition 6)
 - o Particulate Matter: 2.41 tons per year.
 - PM10 (Particulate Matter<10 micron): 2.41 tons per year.
 - Sulfur Dioxide: 2.22 tons per year.
 - Nitrogen Oxides: 9.83 tons per year.
 - Volatile Organic Compounds 0.3 tons per year.
 - Carbon Monoxide: 53.5 tons per year.
 - o HCI: 1.11 tons per year.

The annual emission limitations were included in the operating permit, with the exception of VOC and HCI. The potential emissions of VOC are below de-

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minimus reporting thresholds. Typically the Division does not have annual emission limitations for HAPs unless those limitations serve to classify the facility as a synthetic minor source of HAPs. The heat and methane content of the gas are necessary parameters for calculating emissions and therefore a requirement to test these parameters was added to the operating permit.

- This source shall be limited to a maximum material process rate as listed below and all other activities, operational rates and numbers of equipment as stated in the application. Monthly records of the actual flare operation and consumption of landfill gas shall be maintained by the applicant and made available to the Division for inspection upon request. (Condition 7)
 - Consumption of landfill gas shall not exceed 1200 scf per minute and 1.728 mm scf per day.

Both gas consumption limits listed in the construction permit are short-term limits. Pursuant to PS-Memo 98-3 the short-term limits were removed and replaced by a 12-month rolling total. An annual consumption limit has been included in the operating permit.

APEN reporting requirements (Condition 8)

The APEN reporting requirements were not identified in the permit as a specific condition but are included in Section IV (General Conditions) of the permit under Condition 22.e.

- This source is subject to the odor requirements of Regulation No. 2. (Condition 9)
 - The odor requirements of Regulation No. 2 are listed in the General Condition of the permit and were not included as a specific condition.
- Within one hundred and eighty days (180) after commencement of operation, compliance with the conditions contained on this permit shall be demonstrated to the Division. It is the permittee's responsibility to self-certify compliance with the conditions. Failure to demonstrate compliance within 180 days may result in revocation of the permit. (Condition 10)
 - Self-certification for this facility was received on May 3, 2010 and therefore this requirement was not included in the operating permit.
- The Larimer county landfill is required to prepare an annual calculation of the Non Methane Organic Compound (NMOC) emission rate. If the annual rate is below 50 Mg per year the owner/operator shall submit an annual report to the administrator. If the NMOC emission rate is equal to or greater than 50 Mg per year, the gas collection and control system (this flare) shall be subject to the requirements of 40 CFR Part 60, subpart WWW – Standards of Performance for Municipal Solid Waste Landfills. (Condition 11)

This was added to the operating permit as a note under the flare conditions, since no requirements apply.

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• The Larimer County landfill is subject to the provisions of Regulation No. 3 Part C., Operating Permits (Title V of the 1990 Federal Clean Air Act Amendments). Note under the provisions of Regulation No. 3, Part C, Section IV.B.4, the Larimer County landfill must submit an application to modify the operating permit to reflect the installation of the landfill gas collection and control (GCCS) system or Timberline Energy must apply for a separate Title V permit for the flare. The modification to the existing operating permit or the application for a new operating permit is due within one year of commencing GCCS operations. (Operating Permit 02OPLR243) (Condition 12)

This requirement is fulfilled with this permit action; therefore, this condition was not included in the operating permit.

Emission Factors: The emission factors for the flare, derived from AP-42, were included in the operating permit as given in the construction permit.

Monitoring Plan: The facility will monitor flow to the flare and calculate throughput and emissions on a monthly basis. The facility will also record hours of operation.

Compliance Status: In their Title V permit application, the source indicated that the flare was in compliance with all applicable requirements

IV. Insignificant Activities

The source did not identify any insignificant activities in the Title V permit application.

V. Permit Shield

The source identified 40 CFR Part 60, Subpart WWW as a specific non-applicable condition. As described above, the flare is not currently subject to the requirements of NSPS Subpart WWW and therefore this regulation was included in the permit shield as a specific non-applicable condition.

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